REMARKS

This is a full and timely response to the outstanding non-final Office Action mailed September 24, 2007. The Examiner is thanked for the thorough examination of the present application. Upon entry of this response, claims 1-25 are pending in the present application. Claims 1-7, 10, 12-18, 21, 23, and 25 are rejected under 35 U.S.C. §102(b) as allegedly being anticipated by Lowe et al. (U.S. Pat. No. 5,436,975, hereinafter "Lowe"). Claims 8, 9, 11, 19, 20, 22, and 24 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Lowe in view of Lowe et al. (U.S. Pat. No. 5,371,799, hereinafter "Lowe '799"). Applicants respectfully request consideration of the following remarks contained herein. Reconsideration and allowance of the application and presently pending claims are respectfully requested.

Response to Claim Rejections Under 35 U.S.C. § 102

It is axiomatic that "[a]nticipation requires the disclosure in a single prior art reference of each element of the claim under consideration." *W. L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1554, 220 USPQ 303, 313 (Fed. Cir. 1983). Therefore, every claimed feature of the claimed invention must be represented in the applied reference to constitute a proper rejection under 35 U.S.C. § 102.

Claims 1-7, 10, 12-18, 21, 23, and 25 stand rejected under 35 U.S.C. §102(b) as allegedly being anticipated by Lowe. For at least the reasons set forth below, Applicants traverse these rejections.

Independent Claim 1

Applicants respectfully submit that independent claim 1 patently defines over Lowe for at least the reason that Lowe fails to disclose, teach or suggest the features emphasized below in claim 1.

Claim 1, as amended, recites (emphasis added):

> 1. An apparatus for generating a stereo sound, comprising:
> at least a direct sound positioner used to generate at least a direct sound signal after receiving an input sound channel;
> at least a reverberation positioner used to generate at least a reverberation direction signal after receiving the input sound channel;
> at least a first sound integrator used to receive the direct sound signal and output an integrated direct sound signal;
> at least a second sound integrator used to receive the reverberation direction signal and output an integrated reverberation direction signal;
> at least a reverberation generator used to receive the integrated reverberation direction signal and output a reverberation signal; and
> at least a space processor used to ***perform timing control, adjust a mixed volume of the signals output from the sound integrators***, and receive the integrated direct sound signal and the reverberation signal and output the stereo sound for a user.

Before addressing the rejections put forth in the Office Action, Applicants believe that it would be beneficial to first review the structure of the claimed embodiment. Claim 1 is directed to an apparatus for generating a stereo sound, which includes one or more direct sound positioners used to generate a direct sound signal after receiving an input sound channel. The apparatus further comprises one or more reverberation positioners used to generate a reverberation direction signal after receiving the input sound channel. The apparatus also comprises one or more first sound integrators used to receive the direct sound signal and output an integrated direct sound signal. The

second sound integrators are used to receive the reverberation direction signal and output an integrated reverberation direction signal. The apparatus further includes one or more reverberation generators used to receive the integrated reverberation direction signal and output a reverberation signal. The one or more space processors receive the integrated direct sound signal and the reverberation signal and output the stereo sound for a user.

In alleging that Lowe teaches "at least a space processor," the Office Action cites components 36 (azimuth placement filter), 76 (left signal summer), and 78 (right signal summer) from FIG. 2 of the Lowe reference. (Office Action, page 3). However, Applicants respectfully disagree that Lowe teaches the space processor in claim 1. Claim 1 explicitly recites: 1) "at least a first sound integrator used to receive the direct sound signal and output an integrated direct sound signal"; and 2) "at least a reverberation generator used to receive the integrated reverberation direction signal and output a reverberation signal." This is significant because the space processor receives the integrated direct sound signal (output by at least a first sound integrator) and the reverberation signal (output by at least a reverberation generator) and outputs the stereo sound to a user. However, Lowe fails to teach this interrelationship.

First, the Office Action alleges that the first sound integrator corresponds with components 68, 74 and the reverberation generator corresponds with components 58, 62. Closer examination of FIG. 2 reveals that the signal flow corresponding to these components in Lowe do not align with the signal flow corresponding to the elements recited in claim 1 above. In particular, FIG. 2 shows that component 36 (the alleged "space processor") receives the output from summers 68 and 74 (the alleged "first

sound integator"). Furthermore, summers 76 and 78 receive inputs from the azimuth placement filters. As clearly depicted in FIG. 2, the output of the alleged "reverberation generator" (58, 62) feeds into summer 64, which receives other inputs to generate an output which is then fed into another summer 68 (the alleged "first sound integrator"). The output from summer 68 is then fed to the side azimuth filter 36. (*See* Lowe, col. 4, lines 39-46:"*The respective left outputs from the front filter 44, back filter 46, side filter 48, pseudo random binary sequence generator 58, and reverberation generator 62 are summed in signal summer 64 . . . The summed output signals from summer 64 are fed to signal summer 68 that receives at its other input an unranged side signal from positioner 38 on line 70.*") In this regard, Lowe fails to teach the limitation, "at least a space processor used to receive . . . the reverberation signal . . ." As such, Lowe fails to teach the interrelationship between the first sound integrator, the reverberation generator, and the sound processor as explicitly defined in claim 1.

Notwithstanding, in an effort to further prosecution, Applicants have amended the language of claim 1 to further define the space processor. (Applicants have canceled claim 10.) In particular, Applicants have amended claim 1 to recite: "at least a space processor used to perform timing control, adjust a mixed volume of the signals output from the sound integrators . . ." Applicants respectfully submit that the "space processor" (36, 76, 78) fails to perform these functions. While the Office Action cites col. 4, lines 20-38, Applicants fails to see how the cited text teaches the limitations of performing timing control and adjusting a mixed volume of the signals output from the sound integrators.

For at least the foregoing reasons, Applicants respectfully submit that independent claim 1 patently defines over Lowe for at least the reason that Lowe fails to disclose, teach or suggest the highlighted features in claim 1 above.

Independent Claim 12

Applicants respectfully submit that independent claim 12 patently defines over Lowe for at least the reason that Lowe fails to disclose, teach or suggest the features emphasized below in claim 12.

Claim 12 recites (emphasis added):

> 12. A method for generating a stereo sound, comprising:
> using at least a direct sound positioner to generate at least a direct sound signal after receiving an input sound channel;
> using at least a reverberation positioner to generate at least a reverberation direction signal after receiving the input sound channel;
> using at least a first sound integrator to receive the direct sound signal and output an integrated direct sound signal;
> using at least a second sound integrator to receive the reverberation direction signal and output an integrated reverberation direction signal;
> using at least a reverberation generator to receive the integrated reverberation direction signal and output a reverberation signal; and
> ***using at least a space processor to receive the integrated direct sound signal and the reverberation signal and output stereo sound for a user***.

While the scopes of claims 1 and 12 differ, Applicants rely on arguments similar to those put forth above (as the Office Action applies the same arguments used for claim 1 to reject claim 12). In particular, the Office Action alleges that the first sound integrator corresponds with components 68, 74 and the reverberation generator corresponds with components 58, 62. However, closer examination of FIG. 2 reveals

that the signal flow corresponding to these components in Lowe do not align with the signal flow corresponding to the elements recited in claim 12 above. In particular, FIG. 2 shows that component 36 (the alleged "space processor") receives the output from summers 68 and 74 (the alleged "first sound integator"). Furthermore, summers 76 and 78 receive inputs from the azimuth placement filters. As clearly depicted in FIG. 2, the output of the alleged "reverberation generator" (58, 62) feeds into summer 64, which receives other inputs to generate an output which is then fed into summer 68 (the alleged "first sound integrator"). In this regard, Lowe fails to teach the limitation, "using at least a space processor to receive . . . the reverberation signal . . ." As such, Lowe fails to teach the interrelated steps involving the first sound integrator, the reverberation generator, and the sound processor as explicitly defined in claim 12.

For at least the foregoing reasons, Applicants respectfully submit that independent claim 12 patently defines over Lowe for at least the reason that Lowe fails to disclose, teach or suggest the highlighted features in claim 12 above.

Independent Claim 23

Applicants respectfully submit that independent claim 23 patently defines over Lowe for at least the reason that Lowe fails to disclose, teach or suggest the features emphasized below in claim 23.

Claim 23 recites (emphasis added):

> 23. A method for generating a stereo sound, used to integrate a plurality of sound channel into a stereo sound channel, the method comprising:
> sending each of the sound channels to a corresponding direct sound positioner and a corresponding reverberation;
> sending a left sound channel and a right sound channel

output from the direct sound positioner to a first left sound integrator and a first right sound integrator, respectively;

sending a left sound channel and a right sound channel output from the reverberation positioner to a second left sound integrator and a second right sound integrator, respectively;

processing integrated signals output from the second left sound integrator and second right sound integrator via a left reverberation generator and a right reverberation generator, respectively;

sending an integrated signal output from the first left sound integrator and a generated signal output from the left reverberation generator to a first space processor for processing; and

sending an integrated signal output from the first right sound integrator and an generated signal output from the right reverberation generator to a second space processor for processing.

The Office Action again applies the same arguments for claim 1 to reject claim 23. Applicants respectfully submit that Lowe, however, fails to teach the elements emphasized above in claim 23. In particular, Lowe fails to teach "sending . . . a generated signal output from the [left/right] reverberation generator to a [first/second] space processor for processing." As noted above, the Office Action alleges that the first sound integrator corresponds with components 68, 74 and the reverberation generator corresponds with components 58, 62. However, closer examination of FIG. 2 reveals that the signal flow corresponding to these components in Lowe do not align with the signal flow corresponding to the elements recited in claim 23 above. In particular, FIG. 2 shows that component 36 (the alleged "space processor") receives the output from summers 68 and 74 (the alleged "first sound integator"). Furthermore, summers 76 and 78 receive inputs from the azimuth placement filters. As clearly depicted in FIG. 2, the output of the alleged "reverberation generator" (58, 62) feeds into summer 64, which receives other inputs to generate an output which is then fed into summer 68 (the

alleged "first sound integrator"). In this regard, Lowe fails to teach the interrelated steps involving the first left/right sound integrators, the left/right reverberation generators, and the first/second sound processors as explicitly defined in claim 23.

For at least the foregoing reasons, Applicants respectfully submit that independent claim 23 patently defines over Lowe for at least the reason that Lowe fails to disclose, teach or suggest the highlighted features in claim 23 above.

Dependent Claims 2-9, 11, 13-22, and 24-25 are Patentable

Applicants submit that dependent claims 2-9, 11, 13-22, and 24-25 are allowable for at least the reason that these claims depend from an allowable independent claim. *See, e.g., In re Fine*, 837 F. 2d 1071 (Fed. Cir. 1988).

Additionally and notwithstanding the foregoing reasons for the allowability of the corresponding independent claims, these dependent claims recite further features/steps and/or combinations of features/steps, as apparent by examination of the claims themselves, that are patentably distinct from the prior art of record. Hence, there are other reasons why these dependent claims are allowable.

CONCLUSION

Applicants respectfully submit that all pending claims are in condition for allowance. Favorable reconsideration and allowance of the present application and all pending claims are hereby courteously requested. If, in the opinion of the Examiner, a telephone conference would expedite the examination of this matter, the Examiner is invited to call the undersigned attorney at (770) 933-9500.

No fee is believed to be due in connection with this amendment and response to Office Action. If, however, any fee is believed to be due, you are hereby authorized to charge any such fee to deposit account No. 20-0778.

Respectfully submitted,

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